

MOISTURE.

The *quantity of moisture* in the atmosphere at any time may be expressed by the weight of the vapor coexisting with the air contained in a cubic foot of space, or by the tension or pressure of the vapor, or by the temperature of the dew-point. The mean dew-points for each station of the Weather Bureau, as deduced from observations made at 8 a. m. and 8 p. m., daily, are given in Table I.

The *rate of evaporation* from a special surface of water on muslin at any moment determines the temperature of the wet-bulb thermometer, but a properly constructed evaporimeter may be made to give the *quantity* of water evaporated from a similar surface during any interval of time. Such an evaporimeter, therefore, would sum up or integrate the effect of those influences that determine the temperature as given by the wet bulb; from this quantity the *average humidity of the air* during any given interval of time may be deduced.

Measurements of evaporation within the thermometer shelters are difficult to make so as to be comparable at temperatures above and below freezing, and may be replaced by computations based on the wet-bulb temperatures. The absolute amount of evaporation from natural surfaces not protected from wind, rain, sunshine, and radiation, are being made at a few experimental stations and will be discussed in special contributions.

Sensible temperatures.—The sensation of temperature experienced by the human body and ordinarily attributed to the condition of the atmosphere depends not merely on the temperature of the air, but also on its dryness, on the velocity of the wind, and on the suddenness of atmospheric changes, all combined with the physiological condition of the observer. A complete expression for the relation between atmospheric conditions and nervous sensations has not yet been obtained.

PRECIPITATION.

[In inches and hundredths.]

The *distribution of precipitation* for the current month, as determined by reports from about 2,500 stations, is exhibited on Chart III. The numerical details are given in Tables I, II, III, and IV. The total precipitation for the current month was heaviest (over 12 inches) in the northwest corners of Oregon and Washington, respectively; it was least (trace or zero) in southern California and Idaho, and western Arizona and Utah, and New Mexico. The largest values were: Neahbay, 17.5, and Glenora, 19.3.

The *diurnal variation*, as shown by tables of hourly means of the total precipitation, deduced from self-registering gauges kept at the regular stations of the Weather Bureau, is not now tabulated.

The *current departures* from the normal precipitation are given in Table I, which shows that precipitation was in excess on the coasts of Washington and Oregon, the lower Lake Region, New England, Middle States, and the Carolinas; it was deficient throughout the interior valleys, the Rocky Mountain Plateau, and California. The large excesses were: Neahbay, 6.4; Tatoosh Island, 4.8; Columbia, S. C., 4.2; Philadelphia, 3.5; Baltimore and Cape Henry, 3.4; Kittyhawk and Raleigh, 3.2. The large deficits were: San Francisco, 3.6; Portland, Oreg., and Los Angeles, 3.5; Point Reyes Light and Redbluff, 3.3; Eureka, 3.0.

The *average departure* for each district is also given in Table I. By dividing these by the respective normals the following corresponding percentages are obtained (precipitation is in excess when the percentages of the normals exceed 100):

Above the normal: New England, 110; middle Atlantic, 161; south Atlantic, 139; lower Lake, 130; north Pacific, 119; Florida Peninsula, 108; east Gulf, 106.

Below the normal: west Gulf, 90; North Dakota, 85; southern Slope (Abilene), 66; northern Slope, 64; upper

Mississippi, 62; Missouri Valley, 55; upper Lake, 48; northern Plateau, 42; middle Slope, 28; middle Pacific, 28; southern Plateau, 23.

The *years of greatest and least precipitation* for February are given in the REVIEW for February, 1890. The precipitation for the current month was the greatest on record at: Northfield, 4.45; Oswego, 4.90; Harrisburg, 5.48; Philadelphia, 6.87; Baltimore, 7.07; Kittyhawk, 7.16; Raleigh, 6.73; Columbia, S. C., 8.00; Vicksburg, 10.13; Palestine, 7.05; Tatoosh Island, 13.63. It was the least on record at: Greenbay, 0.26; Carson City, 0.02; Sacramento, 0.09; Fresno, 0.06; San Diego, 0.02; Dodge City, T.; Los Angeles, T.; Yuma, 0.00.

The *total accumulated monthly departures* from normal precipitation from January 1 to the end of the current month are given in the second column of the following table; the third column gives the ratio of the current accumulated precipitation to its normal value.

Districts.	Accumulated departures.	Accumulated precipitation.	Districts.	Accumulated departures.	Accumulated precipitation.
	Inches.	Per ct.		Inches.	Per ct.
Middle Atlantic.....	+ 0.30	103	New England.....	- 2.00	75
South Atlantic.....	+ 0.40	105	East Gulf.....	- 1.40	86
Florida Peninsula.....	+ 0.40	107	Ohio Valley and Tenn.....	- 3.80	57
West Gulf.....	+ 0.10	101	Upper Lakes.....	- 1.10	74
North Dakota.....	+ 0.50	138	Upper Mississippi.....	- 1.60	59
Abilene (southern Slope).....	+ 0.10	105	Missouri Valley.....	- 1.20	56
North Pacific.....	+ 4.90	125	Northern Slope.....	- 0.30	76
			Middle Slope.....	- 1.10	39
			Southern Plateau.....	- 0.20	81
			Middle Plateau.....	- 0.10	97
			Northern Plateau.....	- 1.40	67
			Middle Pacific.....	- 0.70	93
			South Pacific.....	- 2.00	56

Details as to *excessive precipitation* are given in Tables XII and XIII.

The *total monthly snowfall* at each station is given in Table II. Its geographical distribution is shown on Chart VI. The southern limit of freezing temperatures and possible snow is shown on this chart by the isotherm of minimum 32°. The isotherm of minimum 40°, namely, the air temperature within the thermometer shelter, is also given on this chart, and shows approximately the southern limit of frost on exposed surfaces.

The depth of snow on the ground at the close of the month is shown on Chart VII. The condition of the snow on the ground on Monday of each week is also shown on the weekly charts published by the Weather Bureau during December-March, inclusive.

HAIL.

The following are the dates on which hail occurred in the respective States:

Alabama, 5. Arizona, 4, 22. Arkansas, 5, 28. California, 18, 29. Florida, 28, 29. Idaho, 27. Louisiana, 4 to 7, 28. Mississippi, 1, 4, 5, 24, 28. North Carolina, 5, 6. Oregon, 28, 29. South Carolina, 5, 6, 7. Tennessee, 28. Texas, 27. Utah, 28. Virginia, 5, 6. Washington, 1, 26, 28, 29.

SLEET.

The following are the dates on which sleet occurred in the respective States:

Arkansas, 7, 8. California, 29. Colorado, 27, 28, 29. Connecticut, 1, 3, 4, 8, 9, 13. Delaware, 3, 4, 8, 9, 13. District of Columbia, 3, 4, 16. Idaho, 4, 5, 26, 28, 29. Illinois, 2, 3, 5, 10, 12, 28, 29. Indiana, 2, 3, 12, 28, 29. Indian Territory, 2. Iowa, 4, 6, 11. Kansas, 2, 11, 12, 29. Kentucky, 8. Maine, 1, 6, 13, 20, 23. Maryland, 2, 3, 5, 8, 9, 13. Massachusetts, 1, 3, 6, 9, 13. Michigan, 1 to 4, 15, 18, 23. Minnesota, 8, 27, 28. Missouri, 2, 5, 7, 9, 11, 12, 13, 28, 29. Montana, 5, 7, 9, 14, 26, 28. Nebraska, 3, 9, 10, 12, 17, 28, 29. Nevada, 2, 3, 26, 29. New Hampshire, 13, 23. New Jersey, 1, 3, 4, 6, 8, 9, 13, 24, 28. New Mexico, 1, 4, 12, 13, 14. New York, 1, 3, 4,